A New Gill Trematode from Georgia

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DESCRIPTIVE research in North American *Dactylogyrus* began with an account of *D. extensus* by Mueller and Van Cleave (1932), from the gills of the carp, *Cyprinus carpio* L. With nearly 90 species now known in this genus, it is becoming more difficult to establish affinities and dissimilarities by reference to the haptoral armament. A few species possess anchors, bars, and hooks which are morphologically distinct, and can be used as guidelines in comparative morphology. In the majority of cases, however, the sclerotized structures of the haptor are of a somewhat generalized nature.

The copulatory complex seems to afford the best structures for comparison of species. The cirri of many North American forms also tend to be patterned around a generalized architecture, however, so the cirrus is many times unreliable as a feature for establishment of species. The accessory pieces seem to offer almost unlimited variations.

Five host specimens of the silverjaw minnow, *Ericymba buccata* Cope, were obtained by trapping. The fresh hosts were frozen as recommended by Mizelle (1938). The branchial material and recovered parasites were treated as prescribed by Price and Mizelle (1964), and measurements made as outlined by Price (1966). Appropriate measurements and illustrations were accomplished with the aid of a calibrated filar micrometer ocular and a camera lucida, respectively. All measurements are expressed in microns.

Dactylogyrus jaini sp. n.

Host and locality. *Ericymba buccata* Cope, the silverjaw minnow; Milner's Branch, three miles SE of Hollanville, Georgia.

Number of specimens studied. Twelve.

Types. Holotype deposited in the helminthological collection, U. S. National Museum, Washington, D. C. Accession no. 61352. Paratypes in author's collection.

Etymology. Named in honor of S. L. Jain, a leader in the study of the Monogenea of India.

Location of parasites on host. Gill filaments.

Description. A dactylogyrid of moderate size, provided with a thin, smooth cuticle. A prominent constriction present in most specimens, at a level just posterior to copulatory complex; length 482 (457-510), greatest width of body 65 (57-73), just anterior or posterior to constriction. Anterior cephalic border cleft medially, resulting in prominent anterior cephalic lobes; lateral cephalic lobes moderately developed. Eyespots four, members of posterior pair closer together than members of other pair. Very little tendency toward dissociation of eyespots. Pharynx subcircular in both dorsal and ventral views, somewhat elongate longitudinally; transverse diameter 20 (18-23). Peduncle in most narrow and elongate, tending to become short and stout in three specimens. Haptor well set off from body proper, wider than long; length 54 (50-58), width 72 (65-81).

One pair of anchors, dorsal in position (Figs. 1-2). Each anchor composed of (1) a solid base provided with well-defined deep and superficial roots, the superficial much longer; (2) a solid shaft; and (3) a solid point; shaft and point meet at a definite angle. Length of anchor 29 (27-32), width of base 13 (11-14). Anchor wings prominent. Dorsal bar simple, variable in shape (Figs. 3-4); length 19 (18-22). Ventral bar in form of a wide "V", the lateral arms asymmetrical, with a built-up central portion. Hooks 16 in number (8 pairs), arranged in essential agreement with Mizelle and Crane (1964). Members of hook pair 4A observed (Mizelle and Price, 1963). All hooks similar in shape and subequal in size, except for members of pair 4A (Figs. 6-8). Each hook composed of (1) a solid elongate base, well differentiated from (2) a relatively narrow elongate shaft, and (3) a

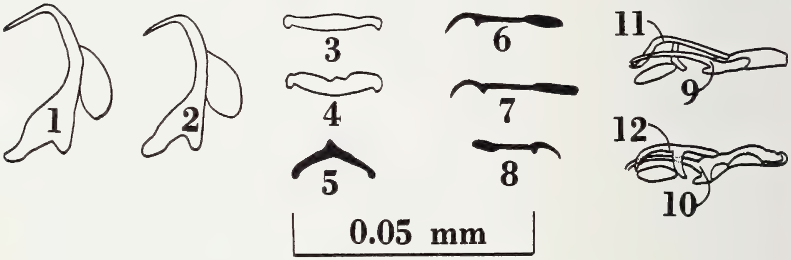

Fig. 1. *Dactylogyrus jaini* sp. n. 1,2, anchors; 3,4, dorsal bars; 5, ventral bar; 6,7,8, hooks; 9,10, cirri; 11,12, accessory pieces.

sickle-shaped termination provided with an opposable piece. Hook lengths: no. 1, 16 (15-17); nos. 2 and 6, 18 (17-19); no. 3, 22 (21-24); nos. 4, 5, and 7, 19 (18-20); no. 4A, 10 (9-12).

Copulatory complex composed of a cirrus and an accessory piece. Cirrus tubular, expanded at point of attachment of tube and base (Figs. 9-10); length, including base, 35 (33-39). Accessory piece complex (Figs. 11-12), consisting of a sclerotized main shaft and an accessory ramus. Main shaft ends in a mildly recurved point. The accessory ramus, arising at the approximate midlength of main shaft, curves partially over cirrus tube. Attached to distal aspect of accessory ramus is an additional sclerotized structure of lesser density than other parts of accessory piece. Additional sclerotized structure of variable morphology. Length of accessory piece 20 (19-22). A single prostatic reservoir, in most cases folded back upon itself. Vagina not observed with certainty, but an unsclerotized atrium apparently opens near left body margin, just posterior to copulatory complex. Gonads globose-ovate in outline, the post-ovarian testis tending to become somewhat more elongate in some. Seminal vesicle formed by dilatation of vas deferens.

Vitellaria well-developed, composed of large granules; granules evenly disseminated, with tendency toward clumping in a few specimens. Vitellaria does not exhibit strong tendency toward formation of lateral bands. Intestinal crura confluent posteriorly.

Comparisons. The present form possesses a copulatory complex quite similar to that of *D. microphallus* Mueller, 1938, recovered from *Semotilus atromaculatus.* The accessory pieces of the two species are similar except for the lightly sclerotized accessory appendage present in *D. jaini.* The cirri of the two forms are similar, each being rather small in the tubular portion; the cirrus base, however, is larger and more complex in *D. jaini* and additionally possesses a small digitiform process, missing in *D. microphallus.* In this particular comparison, there exist enough dissimilarities in the parts of the haptoral armament to separate the species by comparing these structures. Although many small to moderate differences can be detected, there is little doubt that *D. microphallus* is the nearest morphological relative of *D. jaini.*

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